

5 **What is claimed is:**

1. An image compression device comprising:

an image receiver for storing image data inputted from various kinds of image media ;

a knowledge database for storing the image data to a database in an appropriate form by applying a prior knowledge;

a hierarchical separator for splitting each of input image into several hierarchical images, respectively, by applying an information stored in the knowledge database;

a hierarchical image storage for storing each of the split hierarchical images;

a hierarchical image compressor for compressing each of the split hierarchical images;

a compressed data storage for storing the compressed data;

a decoder for decompressing and restoring the compressed data;

a predicted decompression image storage for storing the restored data; and

a knowledge database controller for applying the predicted decompressed image stored in the predicted decompression image storage in order to manage and update information of the knowledge database.

- 5 2. An image compression method comprising:
- a step of constructing a knowledge database by applying a prior knowledge to an inputted image;
- a step of storing temporarily the inputted image to a memory;
- a step of updating the knowledge database about the inputted image;
- 10 a step of splitting the inputted image into hierarchical images by applying the knowledge database;
- a step of compressing the split hierarchical image data according to the corresponding split hierarchies, respectively;
- a step of generating a compressed data by merging the compressed split
- 15 hierarchical image data;
- a step of decoding the compressed data to generate a restored image; and
- a step of updating the restored image in the knowledge database.
3. The image compression method according to claim 2, wherein the step of
- 20 splitting the inputted image into hierarchical images comprises splitting the inputted image into at least two hierarchical images containing an image with a background image and an image without the background image.
4. The image compression method according to claim 3, wherein the image
- 25 without the background image is split into a changed image and an unchanged image.

5 5. The image compression method according to claim 2, wherein the step of
updating the restored image in the knowledge database is performed such that an
intermediate background image substitutes for the inputted image and initializes a grade
integer to '0' where a difference between a block of the inputted image and a block
corresponding to the intermediate background image is greater than a threshold value,
10 and that the intermediate background image increases the grade integer by '1' where the
difference between the block of the inputted image and the block corresponding to the
intermediate background image is less than the threshold value, and that the background
image updates the image of the blocks where the number of the blocks respectively
having a grade integer of over a predetermined value is greater than the threshold value.

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